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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,135

07/25/2005

Masakatsu Maruyama

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4372

38327

7590

08/02/2007

REED SMITH LLP

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EXAMINER

RAYMOND, BRITTANY L

ART UNIT

PAPER NUMBER

1756

MAIL DATE

DELIVERY MODE

08/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,135	Applicant(s) MARUYAMA ET AL.	
	Examiner Brittany Raymond	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 5,6 and 8-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5,6 and 8-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/25/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/25/2005, 2/28/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II, claims 5, 6 and 8-18 in the reply filed on 6/28/2007 is acknowledged.
2. Claims 1-4 and 7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/28/2007.

Drawings

3. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 5, 6 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gronbeck (U.S. Patent 6803171).

Gronbeck discloses a photoimageable composition and a process for its use comprising: coating the photoimageable composition onto a substrate, drying the composition by heating, imaging the composition through a mask, performing a post exposure bake, developing the patterned composition, and performing a final bake step to remove solvent (Column 24, Line 20-Column 25, Line 13), as recited in claims 5, 12 and 13 of the present invention. Gronbeck also discloses that photoimageable compositions may be used as dielectric materials in the manufacture of electronic devices and that the dielectric materials can include porogens so that pores and voids form when the porogens are removed from the composition (Column 26, Lines 25-35), as recited in claims 5 and 12 of the present invention. It would be known by one of ordinary skill in the art that this can be done by heating. Gronbeck states that the photoimageable composition can be exposed with ultraviolet, visible, e-beam, and x-ray radiation sources (Column 23, Lines 32-37), as recited in claim 6 of the present invention. Gronbeck also states that the photoimageable composition can comprise

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silsesquioxane-containing polymers (Column 3, Lines 22-26), photoacid generators (Column 17, Lines 12-15), and surfactants (Column 22, Lines 37-42), as recited in claims 6, 8-11 and 14-18 of the present invention.

Gronbeck fails to disclose that a second layer of the photoimageable composition is placed on top of the imaged first layer, and a description of the dielectric line between two conductive plates.

Gronbeck discloses that the process discussed above can be used to manufacture electronic devices, such as integrated circuits (Column 26, Lines 25-28), which would be known by one of ordinary skill in the art to be able to have a dielectric section between two conductive plates, said dielectric section having a width smaller than that of the conductive plates, as recited in claims 5 and 12 of the present invention. Gronbeck also discloses that the photoimageable compositions can be used in bilayer photoresist systems (Column 23, Lines 5-7). Therefore, after processing one layer of the photoimageable layer, a second layer could be placed over the first, as recited in claim 12 of the present invention. Gronbeck states that during development, the exposed areas become less soluble (Column 24, Lines 52-56). This shows that the composition is negative working and the pattern formed from the mask would have a higher dielectric constant than the areas surrounding the patterning that were not exposed, as recited in claims 5 and 12 of the present invention. Gronbeck also states that the composition may be developed, which shows that it does not have to be and both exposed and unexposed portions can remain, as recited in the claims.

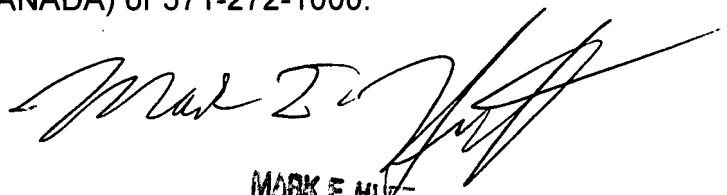
It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have used a second layer of the dielectric composition, as suggested by Gronbeck because Gronbeck teaches that the composition can be a part of a bilayer photoresist, which shows that it is compatible with similar organic films.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brittany Raymond whose telephone number is 571-272-6545. The examiner can normally be reached on Monday through Friday, 8:00 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1756